

REVIEWS AND ABSTRACTS.

FLORA OF TROPICAL AFRICA, ed. by Sir A. W. Hill, K.C.M.G., F.R.S., etc., vol. x, part 1, *Arundinella* to *Agrostis*, by E. C. Hubbard, 1937. L. Reeve & Co., price, 15/-.

When the Flora of Tropical Africa was first planned and commenced in 1868 an account of the Grasses extending into two volumes could not have been foreseen, and the authorities at Kew could scarcely have been blamed if, in 1918 when vol. ix—Gramineae—commenced, they had anticipated the vastness of the undertaking and had been content with a briefer and less adequate treatment. As it is we feel that all workers on the African Flora will join in congratulating them in carrying out the undertaking and particularly in their choice of two such patient and accurate monographers as Dr. Stapf and Mr. Hubbard.

The latter, after concluding the final part of vol. ix in partnership with Stapf—alas! no longer with us—assumes the whole responsibility for the new part. And may we say at once that the present volume in thoroughness, clarity and scope maintains the high standard of its predecessors.

Two new genera described by Mr. Hubbard in Kew Bulletin for 1936 are fitted in; *Phaeranthoecium* following *Danthonia* and *Hypseochloa* next to *Agrostis*.

Genera dealt with, which were not envisaged in the initial delimitation in 1918, include *Loudezia* (separated from *Trichopteryx*), *Gilgichloa* (from *Danthoniopsis*), *Trisetum* (from *Koeleria*), *Streblochaete* (from *Danthonia*), *Coelachne* and *Arundo*.

Schismus is transferred from the Festucae to the Avenae and placed next to *Danthonia* while *Thysanolaena*—the type genus of Hubbard's new tribe the Thysanolaenae—appears next to *Lintonia*.

We, for our part, have always looked forward keenly to the appearance of new parts of the Gramineae, and, if we have often waxed impatient, it is only that, in our experience, work with genera not yet included is scarcely practicable.

H. B. G.

CONSPECTUS FLORAE ANGOLENSIS, ed. by Dr. L. Wittnich Carisso, vol. 1, Ranunculaceae—Malvaceae, by A. W. Exell and F. A. Mendonça. Agência Geral das Colónias. Lisbon, Jan. 1937, 50\$00 esc.

Collaboration between scientific workers is no new thing but the fruitful collaboration of two workers of different nationalities is sufficiently infrequent to call for appreciative comment. Mr. A. W. Exell, of the staff of the British Museum, and Sr. F. A. Mendonça, of the Instituto Botanico de Coimbra, are to be congratulated in their successful co-operation, under the editorship of Dr. Carisso, to produce this first volume of the Conspectus Florae Angolensis which has been so eagerly anticipated.

The work covers the families Ranunculaceae to Malvaceae arranged according to the well-tried system of Bentham and Hooker, with generic

arrangements often following recent monographic work. The assistance of Dr. H. Sleumer for the Flacourtiaceae and Dr. Helen Bancroft for the Dipterocarpaceae has been happily secured.

The material cited consists chiefly of the well-known collections of Dr. Welwitsch and Mr. John Gossweiler which have been worked over by the staff of the British Museum and reported on in a series of Supplements to the Journal of Botany.

The species concept adopted is a wide one and wisely so with an area where few field botanists are present to check herbarium distinctions.

The genera and species are described by means of dichotomous keys and the specific descriptions are expanded by means of a short note on the habit and ecology which field workers in particular will value greatly.

If we have any regret it is that concise descriptions of the families could not have been included, since there is no existing guide in Portuguese to the affinities of a plant.

We look forward with keen interest to the appearance of further volumes of this work.

H. B. G.

THE GEOLOGY AND ARCHEOLOGY OF THE VAAL RIVER BASIN, by P. G. Sohngé and D. J. L. Visser (Geologists) and Professor C. van Riet Lowe (Director, Bureau of Archeology). Memoir no. 35, Geological Survey. Government Printer, Pretoria. 1937. 5/-.

The origin of our South African Flora has for long been a matter of argument. Some authors suggest a spread of the South-Western type, migrating east and north, while others would look on the South-West as a cul-de-sac where plants have accumulated from a continual migrational stream down the East African escarpment from the Mediterranean.

Coupled with the larger field is necessarily the occurrence of anomalies such as the discovery of *Podocarpus* in the Waterberg 20 miles west of Naboomspruit by Dr. Galpin, of *Olinia*, *Apodytes* and *Cyathea* in the Magaliesberg by Prof. Phillips and the relationship of the flora of the Umvukwe Hills to the eastern border vegetation of S. Rhodesia attested by Mr. J. Kelly Edwards.

The eastern spread of desert conditions and vegetation of the present time, though perhaps in large part due to human agency, brings further evidence of migration.

And when Rogers (1922) concluded that the climate of post-cretaceous time in Southern Africa had varied between very narrow limits and Bremekamp (1935) suggested "that there is no botanical evidence to suggest the assumption of a pluvial period following the desert period" in the Kalahari it seemed that a clue to the position would be hard to find.

Manifestly much of the difficulty lay, assuming that migration could be interpreted as climate-induced and to depend on the age of a type, in defining and the equivalence of climatic terms.

It is therefore with considerable pleasure that we note in the introduction to the first part of this work, where the geological evidence for fluctuations in the climate of Quaternary times is reviewed and evaluated as a background for the Archeological picture, a careful effort to define the terms used.

That the Geologists, with all their caution and disavowal of the conclusiveness of their work, should be able to present so illuminating a picture as that on p. 56 of this paper, will come as an inspiration to all African Biologists. Three wet phases, of which the first is the longest, alternating with a semi-arid and two arid periods are shown leading on to the present semi-arid.

Here we have a clue which, we believe, may lead ultimately to as complete an explanation of our Flora as has been given for the British Flora by Matthews.

The section devoted to Archeology, while necessarily specialised, gives us the first clearly enunciated sequence of Man's cultures in Southern Africa and draws a picture of human work which will be most meaningful to all students of Africa's past history.

Between the lines we occasionally catch a glimpse of the notion that the pluvial and interpluvial periods of our African climate may be linked with the glacial and interglacial phases of Quaternary Europe so that we join most cordially in the conclusion (p. 56): "It is hoped that the facts elucidated in the course of this Geological Survey and the suggestions that have been advanced as to climatic changes within the Vaal River area during Quaternary times will form a basis for further detailed work in other South African areas, so that in course of time, when co-ordination of information becomes possible, an attempt will be made at a correlation of the climatic changes which occurred in the African region with those of higher latitudes."

H. B. G.
